

IAP9 Rec'd PCT/PTO 01 SEP 2006
Cable Tie Holder**FIELD OF THE INVENTION**

5 The present invention relates to a cable tie holder. The holder of the present invention is adapted to store cable ties of the type used by electrician and other trades people.

BACKGROUND OF THE INVENTION

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Cable ties are widely used by tradespeople in the construction industries most notably by electricians. A cable tie is a convenient way in which a number of cables can be joined together quickly to ensure that wiring bundles and the like are neatly and safely positioned.

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Typically any tradesperson will carry cable ties of varying lengths, so that the correct length can be selected for any given task. The ties are typically provided in a plastic bag container that may have been heat-sealed. The electrician opens the bag by piercing and tearing. Unfortunately, once the bag holding the ties has been opened
20 there is no convenient method of resealing the bag. All too easily the ties slide out of the bag and become lost or difficult to retrieve. The ties may, for example, spill into the vehicle in which they are being transported or into a larger tool bag in which they are held.

25 In either event this is a nuisance for the electrician as this means that time has to be spent retrieving the ties or that they have to be abandoned. Where ties of different sizes have spilled they can become jumbled making the selection of a preferred size of tie more difficult.

30 The present invention is addressed to this situation. It is an object of the present invention to provide a means by which cable ties of a variety of sizes can be stored for carriage or transport in manner that allows them to be easily retrieved for use. It will also become apparent from the description that follows that the use of the holder of

the present invention provides other incidental benefits to both the electrician, or other user of the cable ties and to the provider of the holder.

SUMMARY OF THE INVENTION

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Therefore according to a first aspect of the present invention there is provided a cable tie holder including sheets of flexible material joined together so as to make a series of pockets into which cable ties can be inserted, each of said pockets having a closable side opening at one edge thereof and a central transverse slot, whereby
10 cable ties inserted into said pockets through a side opening may be retrieved from the central slot.

Preferably, the sheets of flexible material includes a base attached to which are two sheets of material being spaced apart so as to provide a slot therebetween, said
15 sheets being partitioned into a series of pockets by dividing means extending across said sheets at spaced intervals. The upper sheet is preferably made of clear material.

Preferably, said pockets are of differing sizes to accommodate cable ties of differing lengths.

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More preferably, said pockets are accessible by a zippered opening serving as a closable side opening.

Preferably said holder may be rolled into a cylindrical shape and secured by fastening
25 means for storage.

Preferably, the holder of the invention is adapted to be suspended vertically during use.

DESCRIPTION OF DRAWINGS

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The above and other objects, features, and advantages of the present invention will be apparent from the following detailed description of a preferred embodiment in conjunction with the accompanying drawings. In the drawings:

Figure 1 illustrates in perspective view a cable tie holder in accordance with a
35 first aspect of the present invention in open view with an inner face uppermost;

Figure 2 illustrates a second perspective view of the cable tie holder of figure 1 with an outer face uppermost; and

Figure 3 illustrates the cable tie holder of figure 1 in a rolled condition.

5 DESCRIPTION OF THE PREFERRED EMBODIMENT

The following detailed description of the invention refers to the accompanying drawings. Although the description of the invention includes exemplary embodiments, the invention may be embodied in alternative forms, and changes may be made to the 10 embodiments described without departing from the spirit and scope of the invention. Wherever possible, the same reference numbers will be used throughout the drawings and the following description to refer to the same and like parts.

Shown in the drawings is a cable ties holder 10 formed in accordance with the present 15 invention. In figures 1 and 2 the cable tie holder 10 is shown in an open form ready for use, whereas in figure 3 the holder 10 is shown in a rolled condition. The holder 10 is formed of a base sheet of 11 any flexible material of sufficient strength that is able to take the weight of cable ties and withstand the somewhat rugged treatment that it is likely to encounter in use by a tradesperson. Without limiting the type of 20 material that may be used for the holder 10, woven nylon material of the type of weight typically used in back packs, briefcases and other carrying devices is a suitable material for construction.

The cable ties holder 10 is, in open form a quadrilateral shape being generally 25 trapezoidal having upper and lower parallel edges 12 and 14 respectively. In the form of the invention illustrated the upper edge 12 is longer than the lower edge 14 although there is no reason why this should always be so and alternative forms of the invention may vary the shape of the holder 10. The distance between the opposing side edges 16 corresponds to the lengths of cable ties that are in common use being 30 fractionally larger than the length of the tie. . Thus, the upper edge 12 is closer to the longest length of tie in widespread use and the lower edge approximates the length of the shorter cable ties in use.

Opposing converging side edges 16 join the upper and lower edges 12, 14 side edges 35 16. The side edges 16 are arranged so as to make the holder 10 symmetrical in plan view. The holder 10 is, as can be seen generally planar in open view and thus has

two faces. A first face 18 designated an outer face is shown uppermost in figure 2 and a second face, an inner face, 20 is shown uppermost in figure 1. When the holder 10 is in the rolled position shown in figure 3 the outer face 18 is visible.

- 5 The inner face 20 of the holder 10 is adapted to hold cable ties 22 of a variety of sizes. The inner face 20 has attached thereto two plastic retaining sheets 24,26. The sheets 24, 26 are disposed towards the side edges of the inner face 20 and extend from the lower edge 14 towards the upper edge 12. The plastic sheets 24, 26 are clear to allow an unhindered view of any contents held behind the sheets. An open
- 10 slot 28, defined by parallel spaced sides of the sheets 24 and 26, runs between the sheets and allows access to the space between each respective sheet 24,26 and the underlying material of the holder 10. A first sheet 24, shown at the top of the drawing in figure 1 is secured by an outer edge to the side edge 16 of the holder by means of a sewn band 30 extending from top to bottom of the holder. A similar sewn edge 32 is
- 15 used to neaten the inner edge of the sheet 24. A second sheet 26 has one side of a zipper 34 attached to its outer edge. The outer side of the zipper 34 is attached to the side edge 16 of the holder by means of a sewn band 36. A sewn edge 38 is used to neaten the inner edge of the sheet 26.
- 20 In alternative forms of the invention a separate zippered opening is provided for each pocket in the holder. In still further embodiments of the invention other fastening means such as a hook and loop or clip closure is used to access the pockets from a side thereof.
- 25 The space formed between the sheets 24, 26 on the one hand and the underlying material of the holder on the other is divided into a series of pockets 40 by parallel spaced apart lines of stitching 42. The lines of stitching 42 extend across the sheet 24, the slot 28 and sheet 26 as far as the zipper 34. The stitching 42 does not affect the action of the zipper 34. Because of the converging sides 16 of the holder 10 it can
- 30 be seen that the pockets are not of equal size but that the width of the pockets 42 diminishes from the upper edge 12 to the lower edge 14. Careful observation will also reveal that the upper, wider pockets 42 are deeper than the lower narrower pockets 42 are shallower. In the embodiment under consideration there are 5 pockets 42 although there is no reason why this figure may not vary.

The zipper 34 extends along the sheet 26 adjacent the side edge 16 of the holder and thereby provides access to the space between the sheet 26 and the underlying material of the holder 10 in much the same way as the slot 28. However, it can be observed that the zipper 34 is movable between open and closed conditions. In the open position cable ties 22 can easily be inserted into, or removed from, the pockets 42 through the opening thereby created. With the zipper 34 closed, the contents of the pockets 42 can only be accessed through the centre slot 28.

It can be observed that the function served by the zipper 34 can equally well be served by a number of alternative fastening means such as a hook and loop fastening arrangement extending along the side edge 16. Further, although it is not deemed necessary for the adequate operation of the holder it is also possible for fastening means in the form of zippers or otherwise to be provided at both edges 16.

Thus, in use, cable ties 22 can be quickly and easily inserted into the pockets 42 with the zipper 34 open. When the zipper 34 is closed the ties are unlikely to be able to inadvertently fall out of the centre slot 28. However, it is an easy task for the user to simply remove a tie 22 via the slot 28 by pulling on the tie in question. As shown in the drawings, the ties can either be completely removed from any packaging and inserted into the holder, or they may be left in their packet 44, and the whole of the packet 44 inserted into the pocket 42. A transverse slot 46 formed in the package allows access to the ties therein through the centre slot 28. The clear plastic sheets 24, 26 ensure that it will always be apparent whether the user needs to replenish their stock of any particular tie size.

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Although the cable tie holder 10 of the invention has been illustrated in a flat position it is in fact convenient if the holder 10 is used vertically. To this end the holder is provided with hanging eyelets 48 at upper corners thereof. The holder 10 can thus be suspended from any convenient hanging place.

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When the task for which the ties 22 are needed has been completed the user can then roll the holder 10 into the rolled position shown in figure 3. The holder 10 is secured in this fashion by a hook and loop fastening arrangement of the type sold under the trade name VELCRO®. Thus, the holder 10 is rolled from the lower edge 14 upwards and a band of hook material 50 at the upper edge 12 of the inner face 20 is secured against two strips of loop material 52 on the outer face 18. The strips 52 are

arranged transverse to the strip 50 to thereby ensure that a connection be made between the strips 50,52 irrespective of whether the holder is full and bulging with ties or is empty. It is also convenient if the looped material is located on the outer face 18 to avoid, so far as is possible the hook material collecting any debris thereon.

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On the inner face of the holder and positioned directly below the strip of hook material 50 is a blank section of the holder. This is provided for the inclusion of advertising or other indicia. Advertising or other written material can be incorporated on the sheets 24,26.

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Thus, the user of the holder is able to quickly locate ties of the correct size needed for the job and retrieve the number required with there being little or no likelihood of escape of ties from their packaging.

15 Although the invention has been shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope and spirit of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and apparatus.

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In any claims that follow and in the summary of the invention, except where the context requires otherwise due to express language or necessary implication, the word "comprising" is used in the sense of "including", i.e. the features specified may be associated with further features in various embodiments of the invention.

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Claims

1. A cable tie holder characterized in that includes sheets of flexible material joined together so as to make a series of pockets into which cable ties can be inserted, each of said pockets having a closable side opening at one edge thereof and a central transverse slot, whereby cable ties inserted into said pockets through a side opening may be retrieved from the central slot.
2. A cable tie holder according to claim 1 characterized in that the sheets of flexible material include a base attached to which are two sheets of material being spaced apart so as to create the central transverse slot therebetween, said sheets being partitioned into a series of pockets by dividing means extending across said sheets at spaced intervals.
3. A cable tie holder according to claim 1 characterized in that an upper sheet of flexible material is made of clear material.
4. A cable tie holder according to claim 1 characterized in that, said pockets are of differing sizes to accommodate cable ties of differing lengths.
5. A cable tie holder according to claim 1 characterized in that, said pockets are of differing sizes to accommodate cable ties of differing lengths and wherein said pockets are arranged sequentially from longest to shortest so as to form a generally trapezoidal shaped holder.
6. A cable tie holder according to claim 1 characterized in that, said pockets are accessible by a single opening serving as a closable side opening.
7. A cable tie holder according to claim 1 characterized in that, each of said pockets is accessible by a separate opening serving as a closable side opening.
8. A cable tie holder according to either claim 6 or claim 7, characterized in that, said a closable side openings are accessed by one or more zippers.

9. A cable tie holder according to either claim 6 or claim 7, characterized in that, said a closable side openings are accessed by one or more openings having a hook and loop fastening.

5 10. A cable tie holder according to claim 1 characterized in that said holder may be rolled into a cylindrical shape and secured by fastening means for storage.

11. A cable tie holder according to claim 10 characterized in that said fastening means is an adjustable hook and loop fastening means.

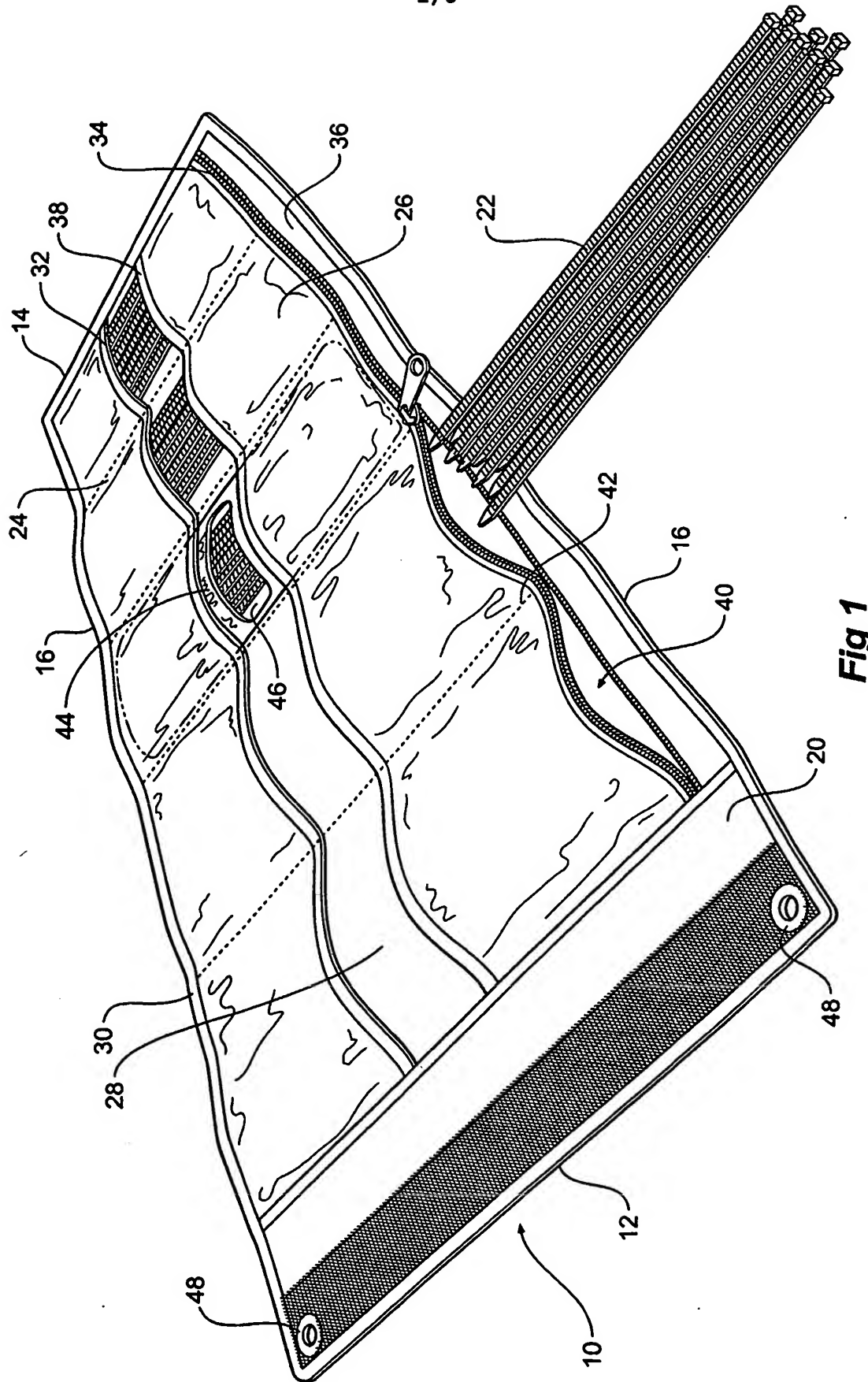
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12. A cable tie holder according to claim 1 characterized in that the holder is adapted to be suspended vertically during use.

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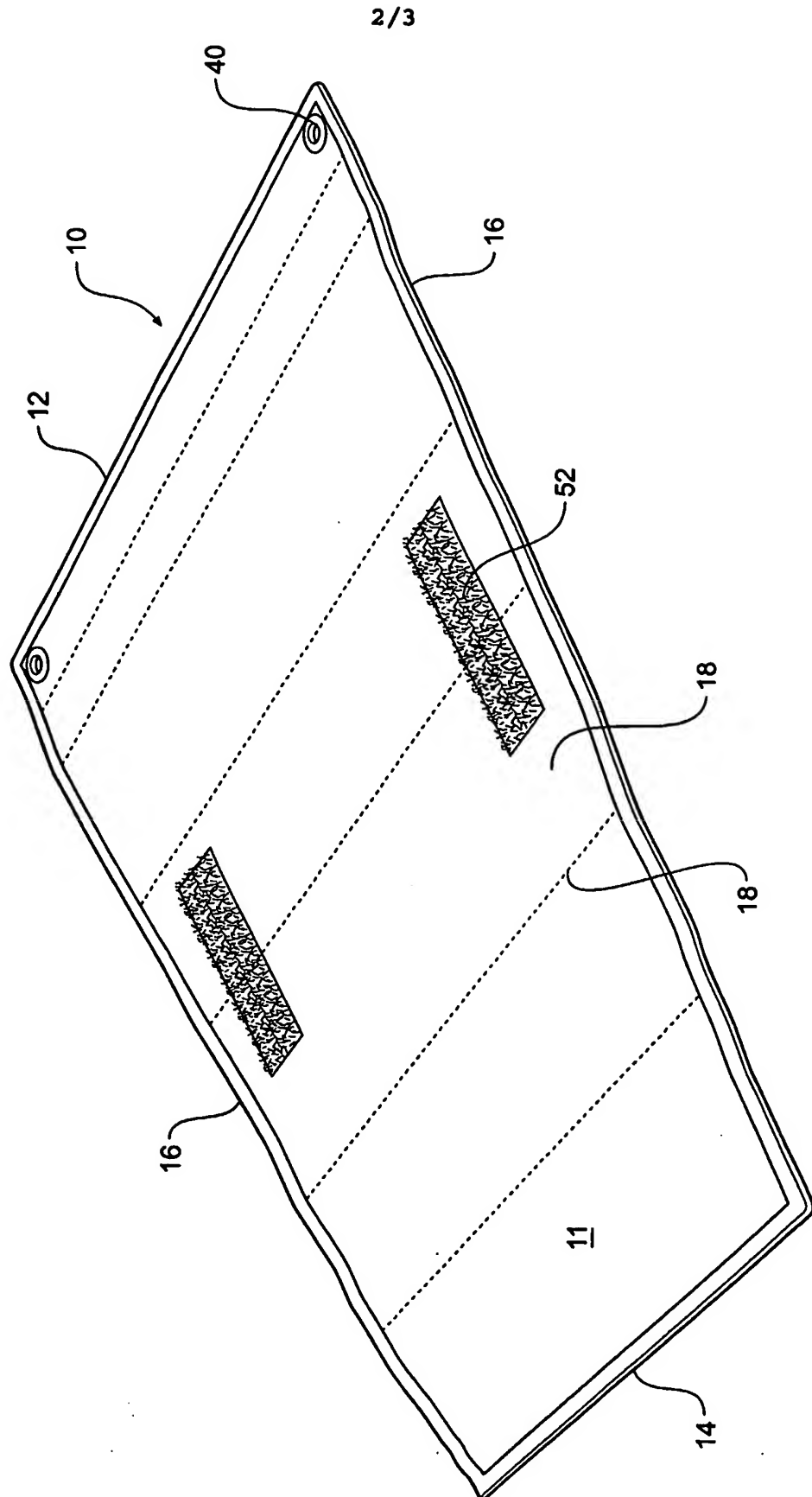


Fig 2

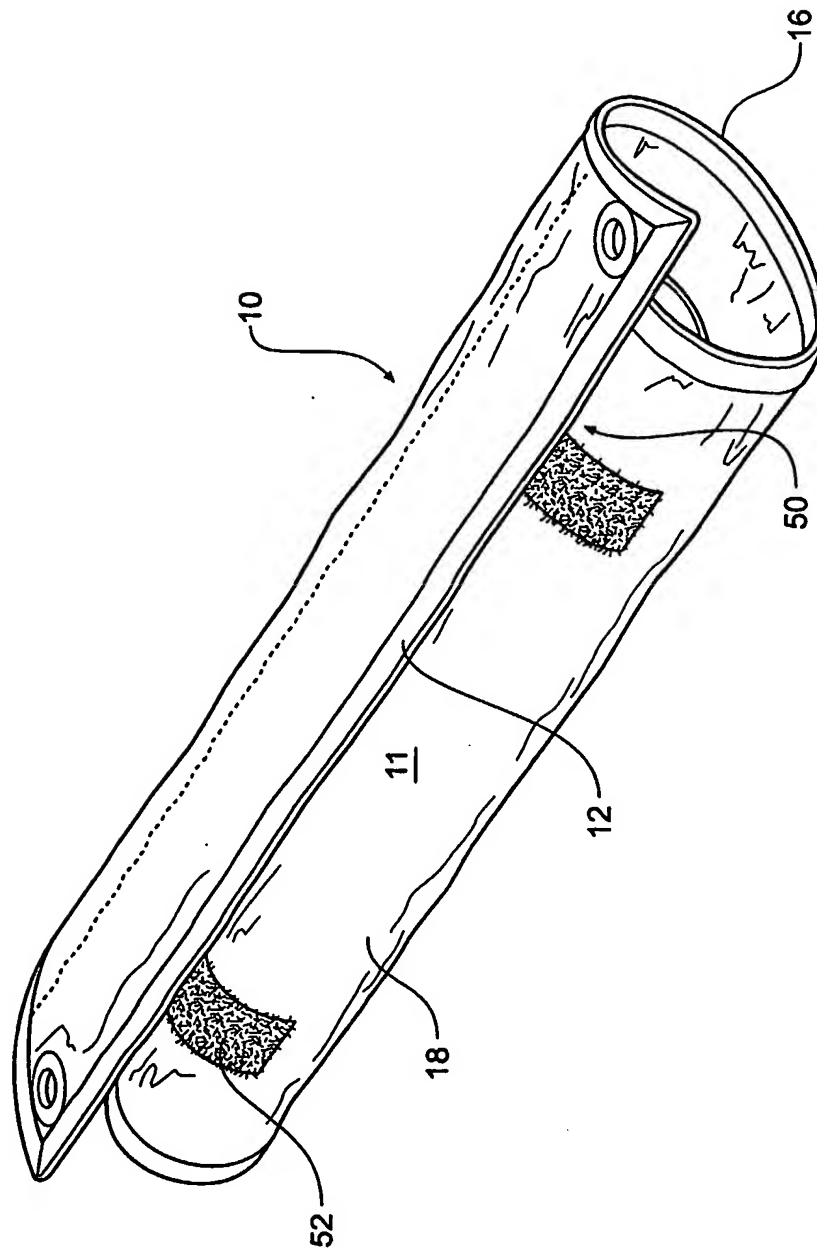


Fig 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2005/000323

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: B65D 27/08, 63/10, 30/22, 33/04, 33/36, 85/24; H02G 3/30; F16L 3/233

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI: cable, band, strap, tie, wrap, store, container, package, receptacle, holder, pouch, bag, carrier, case, casing, dispenser, wallet, pocket, chamber, cell, cavity, compartment

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0016784 A1 (BERRY) 29 January 2004 Figure 5 and paragraph (0035)	1-12
A	US 6681931 B2 (FINLEY) 27 January 2004 Whole document	
A	WO 1999/015419 A1 (RAMBLA BELTRAN) 1 April 1999 Whole document	
A	US 6637595 B1 (FROSSARD et al) 28 October 2003. Whole document	



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2005/000323

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member	
US	2004/0016784	NONE	
US	6681931	US	6343693
		US	2002066684
WO	99/15419	AU	90733/98
US	6637595	NONE	
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.			
END OF ANNEX			